DEPARTMENT OF ECOLOGY
Manchester Environmental Laboratory
7411 Beach Drive East • Port Orchard, Washington 98366-8204

Case Narrative

March 1, 2016

To: Walters, Tracie

Project: Pillon Property

Work Order: 1602053

Subject: Benzene, Toluene, Ethylbenzene, Xylenes

From: Bob Carrell

Sample Receipt

Enclosed are the BTEX results for the samples received by MEL on February 26, 2016. All samples were received in acceptable condition unless noted in Analyst Comments. All samples were prepared and analyzed within holding times unless noted in Analyst Comments.

Analytical Methods

These samples were prepared, analyzed, and verified by MEL according to the submitted chain-of-custody and MEL's procedures. A Sample Correlation Table with batch summary is located in Appendix A. The samples were:

- analyzed following a modification of method SW8021B.

Analyst Comments

None noted.

Sample Qualification

The samples were qualified according to MEL's procedures. The table in Appendix B summarizes the manual qualifiers added by MEL. All results reported below the method reporting limit (RL) were automatically qualified as estimates, but not included in Appendix B. The qualifiers are defined in Appendix C.

Sample Verification

All analyses met QC acceptance criteria except as noted in Appendices D and E.

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Benzene, Toluene, Ethylbenzene, Xylenes

Project: Pillon Property **Field ID: 01**

Work Order: 1602053
Project Officer: Walters, Tracie
Initial Vol: 5 mL
Final Vol: 5 mL

Lab ID #: 1602053-01
Collected: 2/25/2016
Prep Method: No Prep
Analysis Method: SW8021B

Batch ID: B16B181
Prepared: 2/26/2016
Analyzed: 2/26/2016
Matrix: Water
Units: ug/L

CAS#	Analyte	Result	Qualifier	RL	MDL
71-43-2	Benzene	1.0	U	1.0	0.26
100-41-4	Ethylbenzene	1.0	U	1.0	0.11
179601-23-1	m,p-Xylene	2.0	U	2.0	0.24
95-47-6	o-Xylene	1.0	U	1.0	0.18
108-88-3	Toluene	1.0	U	1.0	0.14

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
540-36-3	1,4-Difluorobenzene	11.6	12.0	97	70-130
615-59-8	Benzene, 1,4-dibromo-2-methyl	22.5	25.0	90	70-130

Authorized by: _____ **Release Date:** 3-1-16

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Benzene, Toluene, Ethylbenzene, Xylenes

Project: Pillon Property — Field ID: 02

Work Order: 1602053
Project Officer: Walters, Tracie
Initial Vol: 5 mL
Final Vol: 5 mL

Lab ID #: 1602053-02
Collected: 2/25/2016
Prep Method: No Prep
Analysis Method: SW8021B

Batch ID: B16B181
Prepared: 2/26/2016
Analyzed: 2/26/2016
Matrix: Water
Units: ug/L

CAS#	Analyte	Result	Qualifier	RL	MDL
71-43-2	Benzene	1.0	U	1.0	0.26
100-41-4	Ethylbenzene	1.0	U	1.0	0.11
179601-23-1	m,p-Xylene	2.0	U	2.0	0.24
95-47-6	o-Xylene	1.0	U	1.0	0.18
108-88-3	Toluene	1.0	U	1.0	0.14

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
540-36-3	1,4-Difluorobenzene	11.6	12.0	97	70-130
615-59-8	Benzene, 1,4-dibromo-2-methyl	23.3	25.0	93	70-130

Authorized by: _____ **Release Date:** 3-1-16

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Benzene, Toluene, Ethylbenzene, Xylenes

Project: Pillon Property

Field ID: 03

Work Order: 1602053
Project Officer: Walters, Tracie
Initial Vol: 5 mL
Final Vol: 5 mL

Lab ID #: 1602053-03
Collected: 2/25/2016
Prep Method: No Prep
Analysis Method: SW8021B

Batch ID: B16B181
Prepared: 2/26/2016
Analyzed: 2/26/2016
Matrix: Water
Units: ug/L

CAS#	Analyte	Result	Qualifier	RL	MDL
71-43-2	Benzene	1.0	U	1.0	0.26
100-41-4	Ethylbenzene	1.0	U	1.0	0.11
179601-23-1	m,p-Xylene	2.0	U	2.0	0.24
95-47-6	o-Xylene	1.0	U	1.0	0.18
108-88-3	Toluene	1.0	U	1.0	0.14

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
540-36-3	1,4-Difluorobenzene	11.9	12.0	99	70-130
615-59-8	Benzene, 1,4-dibromo-2-methyl	21.6	25.0	86	70-130

Authorized by: _____ **Release Date:** 3-1-16

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Benzene, Toluene, Ethylbenzene, Xylenes

Project: Pillon Property — Field ID: 04

Work Order: 1602053
Project Officer: Walters, Tracie
Initial Vol: 5 mL
Final Vol: 5 mL

Lab ID #: 1602053-04
Collected: 2/25/2016
Prep Method: No Prep
Analysis Method: SW8021B

Batch ID: B16B181
Prepared: 2/26/2016
Analyzed: 2/26/2016
Matrix: Water
Units: ug/L

CAS#	Analyte	Result	Qualifier	RL	MDL
71-43-2	Benzene	1.0	U	1.0	0.26
100-41-4	Ethylbenzene	1.0	U	1.0	0.11
179601-23-1	m,p-Xylene	2.0	U	2.0	0.24
95-47-6	o-Xylene	1.0	U	1.0	0.18
108-88-3	Toluene	1.0	U	1.0	0.14

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
540-36-3	1,4-Difluorobenzene	11.8	12.0	98	70-130
615-59-8	Benzene, 1,4-dibromo-2-methyl	23.4	25.0	94	70-130

Authorized by: _____ **Release Date:** 3-1-16

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Benzene, Toluene, Ethylbenzene, Xylenes

Project: Pillon Property

QC Type : Method Blank

Work Order: Batch QC
Project Officer: Walters, Tracie
Initial Vol: 5 mL
Final Vol: 5 mL

Lab ID #: B16B181-BLK1
Prep Method: No Prep
Analysis Method: SW8021B
Source Field ID: B16B181-BLK1

Batch ID: B16B181
Prepared: 2/26/2016
Analyzed: 2/26/2016
Matrix: Water
Units: ug/L

CAS#	Analyte	Result	Qualifier	RL	MDL
71-43-2	Benzene	1.0	U	1.0	0.26
100-41-4	Ethylbenzene	1.0	U	1.0	0.11
179601-23-1	m,p-Xylene	2.0	U	2.0	0.24
95-47-6	o-Xylene	1.0	U	1.0	0.18
108-88-3	Toluene	1.0	U	1.0	0.14

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
540-36-3	1,4-Difluorobenzene	11.9	12.0	99	70-130
615-59-8	Benzene, 1,4-dibromo-2-methyl	24.6	25.0	98	70-130

Authorized by: _____ **Release Date:** 3-1-16

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Benzene, Toluene, Ethylbenzene, Xylenes

Project: Pillon Property **QC Type : LCS**

Work Order: Batch QC
Project Officer: Walters, Tracie
Initial Vol: 5 mL
Final Vol: 5 mL

Lab ID #: B16B181-BS1
Prep Method: No Prep
Analysis Method: SW8021B
Source Field ID: B16B181-BS1

Batch ID: B16B181
Prepared: 2/26/2016
Analyzed: 2/26/2016
Matrix: Water
Units: %

Analyte	Result	Spike Level	RL	%Rec	%Rec Limits
Benzene	9.6	10.0	1.0	96	70-130
Ethylbenzene	9.5	10.0	1.0	95	70-130
m,p-Xylene	19.1	20.0	2.0	96	70-130
o-Xylene	9.5	10.0	1.0	95	70-130
Toluene	9.4	10.0	1.0	94	70-130

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
540-36-3	1,4-Difluorobenzene	11.8	12.0	98	70-130
615-59-8	Benzene, 1,4-dibromo-2-methyl	23.5	25.0	94	70-130

Authorized by: _____ **Release Date:** 3-1-16

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Benzene, Toluene, Ethylbenzene, Xylenes

Project: Pillon Property

QC Type : LCS Dup

Work Order: Batch QC
Project Officer: Walters, Tracie
Initial Vol: 5 mL
Final Vol: 5 mL

Lab ID #: B16B181-BSD1
Prep Method: No Prep
Analysis Method: SW8021B
Source Field ID: B16B181-BSD1

Batch ID: B16B181
Prepared: 2/26/2016
Analyzed: 2/26/2016
Matrix: Water
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
Benzene	10.0	10.0	100	4	70-130	40
Ethylbenzene	10.1	10.0	101	6	70-130	40
m,p-Xylene	20.2	20.0	101	6	70-130	40
o-Xylene	10.0	10.0	100	5	70-130	40
Toluene	9.9	10.0	99	5	70-130	40

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
540-36-3	1,4-Difluorobenzene	11.8	12.0	98	70-130
615-59-8	Benzene, 1,4-dibromo-2-methyl	23.4	25.0	94	70-130

Authorized by: _____ **Release Date:** 3-1-16

Appendix A
Sample Correlation Table

Batch ID: B16B181 **Prep Method: NA**
Prepared: 2/26/2016 **Analysis Method: SW8021B**

Field ID	MEL ID
01	1602053-01
02	1602053-02
03	1602053-03
04	1602053-04
Blank	B16B181-BLK1
LCS	B16B181-BS1
LCS Dup	B16B181-BSD1

Appendix B
Manual Qualification Table

WO: 1602053 **Analysis:** BTEX

No manual qualifiers were added to the samples or batch QC.

Appendix C
Data Qualifier Definitions

Code	Definition
E	Reported result is an estimate because it exceeds the calibration range.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
NAF	Not analyzed for.
NC	Not calculated.
REJ	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
U	The analyte was not detected at or above the reported sample quantitation limit.
UJ	The analyte was not detected at or above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte in the sample.
bold	The analyte was present in the sample. (Visual aid to locate detected compounds on the analytical report.)

Appendix D
QC Exceptions Report

Lab ID	Analyte	Exception

No QC exceptions reported.

Appendix E
Initial Calibration Exceptions Report

SEQ ID: B160709 **Analysis:** BTEX

LabNumber	QC Exception

No ICAL exceptions.